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ABSTRACT

During the last decade there was a rapid expansion of postsecondary education in all member countries of OECD. In the present decade the growth in absolute student numbers will continue and, in many member countries, the relative rate of growth may well accelerate. In the first stage the main method used to meet quantitative problems posed by rising demand was to enlarge existing structures; in the second stage, expansion is creating important changes of kind in the structures themselves--in the size, character and curricula of existing institutions--and by causing increased concern on the part of governments with the size, form, and cost of the postsecondary sector as a whole. This OECD program seeks to review the structural changes now taking place in postsecondary education, to examine the form and feasibility of various models that are emerging in member countries, and to assist in a more efficient exchange of national and institutional experience. It is hoped that this will lead to the preparation of a major policy report based on a comparative analysis of structural innovations and their appropriate planning mechanisms. (HS)

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PLANNING NEW STRUCTURES OF POST-SECONDARY EDUCATION

Introductory Analysis and Draft Programme of Work

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PLANNING NEW STRUCTURES OF POST-SECONDARY EDUCATION

Introductory Analysis and Draft Programme of Work

I. INTRODUCTION

1. During the last decade there was a rapid expansion of post-secondary education in all Member countries of OECD. In the present decade the growth in absolute student numbers will continue and, in many Member countries, the relative rate of growth may well accelerate. In the first stage the main method used to meet the quantitative problems posed by rising demand was to enlarge existing structures; in the second stage, expansion is creating important changes of kind in the structures themselves, in the size, character and curricula of existing institutions, and causing increased concern on the part of governments with the size, form and cost of the post-secondary sector as a whole.

2. Rising costs are an important factor. While marginal economies and improved efficiency may help to hold down average costs, existing educational and political commitments must unavoidably lead to a fairly sharp rise in absolute cost. But wider issues are involved. Changing conditions make it increasingly desirable to treat post-secondary education as an integrated system. It is no longer sensible - and less and less practicable - to insist on the traditional (and sometimes arbitrary) distinctions between the higher levels of vocational, technical education, teacher training, and general undergraduate education in university institutions. The movement towards recurrent education - that is, entry in later life to types of formal and even full-time education by persons already in the labour-force, is likely further to obscure the boundaries between full and part-time students, between those who enter the system straight from school and those who come to it later in working life.

3. Government and other agencies involved in the planning of higher education here encounter a dilemma which is inherent in the structure of all large-scale and complex organisations in an advanced economy. They need to establish an overall coherence of the system. For this reason, and to rationalise the use of resources and to ensure their efficient use, they find it necessary to develop more sophisticated structures and to devise planning processes for formulating and implementing policy.

Conversely, the complexity of the system, the diversity of its component units, and the momentum that each unit inevitably develops for its own institutional purposes, demand a considerable measure of autonomy if a system is to allow individual institutions reasonable freedom to experiment and innovate and to avoid a breakdown caused by inflexible and over-centralised planning. Such a dilemma can be evaded in the short-run, not least because the system throws up so many immediate and pressing issues for decision within the existing framework that all the available - and usually limited - resources of government departments may well be absorbed in responding to them. Much of the planning that is done at present is thus restricted to quantitative aspects of expansion, such as extrapolations of student numbers, the supply of teachers, of existing unit costs, and the need for offices, teaching spaces, libraries, laboratories, equipment, and research facilities. The dilemma may also be evaded by going to the other extreme, that is, by raising fundamental questions about the social and educational assumptions of higher education and by dealing in educational "futures" which attempt to forecast the forms it should take in the remaining years of the century.

4. Yet, in the current decade, it is the problem of medium-range planning and development that is urgent and relevant. For many obvious reasons, the pace of change is bound to be relatively slow. Institutions, and those who control them and work in them, have established objectives, habits and resources, and even when there are strong pressures for change it takes time to accomplish it. This is a familiar situation in all forms of planned social change: the real content of an old structure is bound to persist for some time even when its formal aspects have been modified by law or policy-decision. A crucial consideration in analysing this situation is the degree to which change has originated <u>within</u> an institution or sub-system, or has been imposed on it from outside.

5. What means should be employed to determine the direction and critical points of structural change? What new structures are likely to have a decisive effect and how should they be developed? These are the questions to which this OECD programme is addressed. It seeks to review the structural changes now taking place in post-secondary education, to examine the form and feasibility of various models that are emerging in Member countries, and to assist in a more efficient exchange of national (and institutional) experience. It is hoped that it will lead to the preparation of a major policy report, based on a comparative analysis of structural innovations and their appropriate planning mechanisms.

II. UNITY AND DIVERSITY

6. It was suggested earlier (paragraph 3 above) that all post-secondary systems seek to strike a balance between the pressures leading to greater unity in the system, which demand that the sector be considered as a whole and made subject to comprehensive planning, and the pressures which lead to greater diversification - that is, towards a wider range of institutional types, possible qualifications and means of achieving them. In all Member countries the attempt to reconcile these two trends is producing new policies and new institutional structures. Indeed, apart from the purely quantitative aspects of expansion, it is this attempt to reconcile the sometimes conflicting pressures towards unity and diversity that is becoming the main concern of government planning for post-secondary education.

7. It is therefore inevitable that new structures for central planning should be emerging, and that planning agencies should look closely at the comparative cost and effectiveness of different types of institution, and their relation with the system as a whole. While matters of cost (and narrow and possibly dubious estimates of effectiveness) are only one aspect of this question, there is no doubt that budgetary control is one of the main instruments now being employed to co-ordinate the post-secondary sector. It is even more important in "mixed" systems, where universities are relatively autonomous or private institutions exist, than in those where the whole sector has been under relatively direct central control or is the subject of national or state legislation. It is valuable to examine the differences between national systems in this respect because there are significant variations in their nominal character which have not been subjected to much comparative analysis. Whether these turn out to be more, or less, important in practice than in principle (and in what respects) is a matter of some importance in determining future policy.

8. As a general rule, it must be accepted that within the broad spectrum of post-secondary education the diversity of institutions and activities will (and should) increase, while, at the same time, the degree of overlap in their role and functions will also grow. The older and sometimes sharp discontinuities between types of institution (often reaching far back into the school system itself) are thus becoming outmoded in practice and are being discarded for both social and educational reasons. These discontinuities, it must be realised, have proved in the past to be a major source of inflexibility in the educational system, for they create hierarchies of

status and function, inhibit the movement of staff, students and resources between different parts of the system, restrict the development of common policies and standards, and make it very difficult to develop comprehensive planning machinery for the post-secondary sector as a whole.

9. The urgent question, in all Member countries, is how best to develop new structures for planning and control which promote diversity without creating new kinds of discontinuity. In almost all of them, expansion has already changed the traditional conceptions of the university, of the range and duration of its courses, the role of its teachers and students, its relations with government, industry and wider community. It has, at the same time, led to the development and improvement of other institutions of higher education. (In the UK, for example, colleges of technology have been upgraded or, through the Council for National Academic Awards, given the opportunity to devise their own degree-level courses; colleges of education now have their own B. Ed. provision; and the Open University will move degree-level work into the orbit of part-time adult and further education. The revised status of the Pädagogische Hochschulen in Germany, and the establishment of the I.U.T.s in France, are other cases in point.) There is a growing demand for a variety of shorter courses for professional and vocational training, or for conversion of skills to meet technological changes. While larger numbers of entrants are coming forward from the schools, there are signs that many of them wish to postpone career decisions for as long as possible. This tendency is intensified by the fact that, in most systems, they must usually commit themselves irrevocably on leaving school to a particular type of institution - or a course within it - without receiving credit for work done (or intermediate qualifications) if they later change their minds and wish to transfer. The traditional system, it is increasingly realised, ensures that vital decisions about the academic future of many students are in effect taken far back in the secondary school system. At a time when many Member countries are endeavouring to face this problem in the organisation of secondary schooling, they must also expect - as the revolution of rising expectations continues at the post-secondary level - to face the same kind of problem in their systems of higher education. What seems to be required is a flexible balance between common "core" elements and a degree of specialisation which begins at the latest point compatible with the demands of more advanced training.

10. The desire to strike a balance between the pressures towards unity and diversity naturally leads to an attempt to rationalise the flow of resources to various types of institution and to promote co-operation between them in the use of these

resources. The first of these objectives (which is more directly amenable to government policy decisions) is easier to achieve than the second. But, to the extent that there is increasing overlap in the actual work of different institutions, it should become easier to ensure that resources are shared either by co-operation or a rational division of labour.

11. Developments of this kind clearly indicate the need for a more "comprehensive" approach to the post-secondary system, permitting much greater flexibility than is possible in one with sharp discontinuities - in which different institutional types create distinct 'channels' into which students enter relatively early in their careers, from which they cannot depart without losing credit for the work already done, and in which there are marked distinctions of social, academic and professional status. Several systems provide a limited freedom of movement, based on transferable credits for work done or on intermediate qualifications, at least between institutions of the same type (as in the USA). But this principle is now being more widely considered, since it offers the easiest way of moving students to the appropriate place in the system as their aptitudes and interests emerge, of reducing wasteful drop-out through mistaken choices earlier in an academic career, and of assimilating late developers, late entrants, part-timers, remote students, and those re-entering formal studies for retraining or for recurrent education in general. (It is significant that the decision to award accumulating credits, and to grant credits for work done elsewhere, was the first policy issue decided by the Open University in the UK.)

12. A further attraction of the principle of transferable credits is that it permits, rather than inhibits diversity, for students may be able to combine 'learning blocks' from different sources to meet their own specific needs, while institutions may feel more free to specialise in studies where they are strong rather than attempting to cover all the fields of study normally offered at, say, the university level. While there are academic (matters of standard and comparability) as well as practical (matters of student grants, residences, etc.) obstacles to a modular structure of this kind, there are various ways of overcoming them, and these deserve to be studied carefully. For there can be little doubt, at least conceptually, that a structure of this kind offers the easiest means of achieving an overall unity in post-secondary education while preserving and developing the most valuable features of diversity It might also prove a valuable means of providing the mechanisms which will be required by the implementation of the concept

of recurrent education. A simplified analogy may help to illustrate the point. In such a structure, 'learning blocks' (acquired in different institutions, in different fields of study, and at different periods of time) may be regarded as units of a common currency, while the growing range of institutions, fields and methods of study, and compatible qualifications represent an increasing choice of services for which the currency is valid.

13. With the exception of the USA, such a model exists only in embryonic form, and it will certainly take several years before other countries can approach even the American degree of flexibility. Yet many emerging structures (and the tone of planning discussions) are beginning to point in some such direction, and the present project will pay particular attention to the potentialities (as well as the difficulties) of a framework of this kind which combines the merits of a considerable degree of central planning, an accepted hierarchy of institutions based upon academic level and specialised function, and increasingly open student access to all parts of the system by means of progressive achievement and specific choice. Such a system could eventually produce a genuine and continuous spectrum of post-secondary provision, more nearly according to the gradient of occupational and academic skills while enhancing the principle of increasing equality of opportunity.

III. THE STUDY OF NEW STRUCTURES

14. Structural changes take many forms, reaching down through the education system, from the machinery whereby the responsible government department establishes policy, and provides resources for carrying it out, through the relationship of individual institutions to the central authority and to each other, to the internal administration of these institutions and the manner in which they organise their teaching and research. They also affect the intricate relationship with school structures and curricula, on the one hand, and with the social and manpower requirements of society on the other. This programme, however, is primarily concerned with the form and effectiveness of the national post-secondary structure regarded as a system, and it will consider other features of post-secondary education only in so far as they are relevant to structural change.

15. It is desirable, at this point, to note one important point of methodology. It may be very confusing and possibly unhelpful merely to produce typologies of structural innovation

which are divorced from problem-analysis. While it is useful as a first step to note the appearance of similar structures (whether these are concerned with national organisation, the curriculum, new admission policies, the provision of new opportunities through part-time and correspondence courses etc.) in different institutions and different countries, at a higher level of analysis it is essential to study the degree to which such structures are responses to pressures within and upon the system. They have to be judged in terms of their effectiveness in dealing with the problems created by those pressures, not as ideal types. Though this caution is obvious, it is also necessary, since there is evidence that some new structures have been created more by faith and fashion than by rigorous procedures of problem and resource analysis. Thus, in considering new structures at the institutional or sub-institutional level, it is necessary to distinguish between those which have evolved from earlier forms, those which are a priori designs, and those which have been created by a process of problem-identification and systematic development. Such a distinction, of course, will do no more than range any series of innovations along a continuum, but it should help to indicate which structures may have a broader relevance than others, and to minimise the risk that structures may be borrowed by one system from another (or by one institution from another) because of their intrinsic attractions - or even because they are fashionable - rather than because of their proved effectiveness in meeting a defined problem.

16. From this point of view it is possible to distinguish a range of changes which have such structural implications, and are encountered with varying emphasis in all Member countries.

(a) The emergence of new mechanisms for planning higher education policy at the national (or state) level, and ensuring that it is implemented. These include new agencies and techniques for decision-making, more sophisticated means for the collection and analysis of relevant data, and more refined instruments of planning and financial control.

(b) The establishment of new types of institution. These range from new universities, through regrouped institutions (such as the Polytechnics in the UK), to the creation of special institutions for short-cycle or part-time or recurrent education (such as the District Colleges in Norway, the I.U.T. in France, and the Open University in the UK).

(c) The reorganisation and development of older institutions.
This category includes the upgrading of lower-level colleges or of teacher-training and technical institutions into full degree-giving institutions and the provision of a limited number of advanced courses within institutions which are generally offering shorter and lower-level courses.

(d) New internal structures within existing institutions.
These developments are the most diverse, difficult to identify and hardest to evaluate, though they often represent the most immediate point of response to pressure for change. They include new forms of government and administration (including many kinds of student participation), new planning and budgetary processes, new methods of determining curricula and conducting examinations, the creation of the new organisational units, and shifts in the relationships between them, e.g. between departments, faculties and research centres.

(e) New forms of relationship between institutions.
These involve a division of labour or other types of co-operation with regard to the goals and functions of various institutions, and therefore in the way resources are allocated to and used by them. Such a division of labour, it should be noted, may take the form of the movement of students from one institution to another or, increasingly, the exchange of learning resources (especially teachers, or materials for teaching and self-instruction) between institutions. They also affect relations between institutions of higher education and government, semi-governmental agencies, industry, other sectors of education and the community at large.

(f) Structural changes in the sources and characteristics of the student population.
These are due to changes in the secondary school population, the diversification of access routes, the higher proportion of the age-group (and of females) reaching post-secondary education, the increase in numbers following shorter, part-time and correspondence courses, the movement towards recurrent education, and a rise in the numbers going on to supplementary and post-graduate qualifications.

(g) Structural changes in the supply of teachers in the post-secondary sector.
Expansion has created new career opportunities, permitted faster promotion and made transfer between different types of post-secondary institution rather easier and more attractive than in the past. The average age of teachers in higher education has fallen, and heavier teaching loads have made concurrent research rather more difficult for many of them - a trend which is reflected by the emergence of more specialised research units and centres which have little or no contact with normal undergraduate teaching, and by the limited possibilities for research in non-university institutions. At the same time, expanding career opportunities in competitive occupations outside teaching have drawn off a proportion of actual and potential teachers. An encouraging trend in the other direction, however, is revealed by the fact that post-secondary education is beginning to draw more extensively on part-time teachers basically employed outside the sector, either in education, government, industry, medicine, commerce or research organisations.

(h) Structural changes in fields of study.
This category is more amorphous though it is of great importance. It is easier to identify and analyse changes in the "map of learning" where it is subject to some degree of central control (e.g. by the establishment of curricula or examination requirements by state agencies) than where it is a matter of independent and creeping adjustment within individual and relatively autonomous institutions. Within the last decade, however, changes in knowledge and techniques in many academic disciplines (especially in science and technology) have been substantial. The continually changing relationship between education and society, evoked by social and technological development is now increasingly reflected in fields of study, the sequences in which they are taught, and their degree of vocational orientation. As a need for recurrent education is accepted, there will be other adjustments of this kind.

17. The study of all structural innovations is subject to serious constraints. There are the obvious difficulties which arise from the fact that any innovation is unlikely to be well-documented or seriously evaluated in the early critical phases, and from the related fact that it is usually so closely dove-tailed into a specific set of circumstances, or so affected by many variables, that it is hard to generalise conclusions which are capable of transfer to another situation. There are further difficulties that arise when an attempt is made to "weight" the significance of an innovation: it may attract a good deal of interest but actually affect only a small part of one institution, or a minor part of a total system. (For instance, the University of Konstanz has made several radical departures from the traditional German university pattern, but at present with 700 students accounts only for a fraction of the university sector. Conversely, apparently minor shifts in the formal role and activities of the University Grants Committee in the UK, and in its relations with the Department of Education and Science, are beginning to have a noticeable impact on the policy and performance of British universities.) There is a danger that an extensive catalogue of new structures may simply be confusing, revealing neither the true scale nor the relative importance of the examples listed.

18. In the absence of a body of reliable case studies, upon which significant generalisations can be based, the most useful approach is to examine new structures in the context of specific problems. There are a number of advantages in such an approach.

(a) It encourages a careful appraisal and clear formulation of problems - in itself a valuable exercise.

(b) It provides at least some elementary criteria whereby the importance and effectiveness of structural innovations can be evaluated: the new structure can be analysed to test how far it is actually helping to deal with the stated problem.

(c) It indicates where other variables affect both the problem and the working of the new structure, and thus lead towards a more comprehensive and systematic review of a series of inter-related problems.

(d) It helps to relate actual performance to the goals of the educational system. One of the major difficulties created by a very rapid expansion and by the

evolution of new structures is that the process leads to operational decisions on a day-to-day basis without reference to assumed or explicit goals, or without realising that the process itself has modified the original goals.

(e) A problem-based approach, with clear goal reference, is an essential preliminary to any more elaborate form of analysis and model-building or simulation within an individual institution, within part of an educational system, or within the system as a whole. Such an approach, moreover, can more easily take account of social and political dynamics. It is well-known that, according to their position in the structure, individuals both rank problems in different order of priority and formulate them in rather different terms. (The problem of reducing average unit costs, for instance, will be viewed in one way by financial planners in a central state agency, in another way by individual institutions, departments within them, their students and, possibly, public opinion.)

19. It is essential, in studying a specific problem-structure relationship to be quite clear where the policy-initiative lies and how it relates to defined objectives; and to demonstrate the resistances (such as interests, habits and attitudes) as well as the benefits (admission of more students, more effective teaching, better value for money) which must be taken into account in applying policy. It has been difficult to make a systematic start of this kind in the post-secondary sector for a number of reasons, such as the lack of goals which are operationally specific, the weakness of innovation theory, the fact that systems-techniques and model-building are still in an early experimental stage in higher education, the sheer lack of appropriate and comparative data with which to work, and the administrative and political problems involved in designing and implementing new structures. Yet a start has now been made, in some countries at an official level and in others by special research centres, or even individual institutions, because it is increasingly recognised that linear and merely quantitative methods are insufficiently sophisticated to meet the situation expansion is now creating.

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20. The main areas which must be considered in a problem-based approach to new structures can be broadly classified into two groups - those in the first group relating to urgent specific problems and those in the second group relating to the structures and mechanisms which are required for problem-

solving. The first group includes such problems as demand, costs and resources, educational objectives, manpower requirements and social policy; the second group includes means of policy and decision-making, administrative mechanisms, techniques for institutional flexibility and tests of operational viability. It is also necessary for planning structures to be able to assess the long-range implications of policy. While these categories are not exclusive, and certainly contain many sub-categories, they at least cover the main variables which must be taken into account in assessing any new structure or group of structures, and most Member countries are now accumulating data on the majority of these variables and gaining experience in handling it.

IV. PROBLEM AREAS

Demand

21. For obvious reasons, most attention has hitherto been focused on the structural changes created by rising demand. These include changes in access routes to and admission requirements of post-secondary institutions, in the relative status, allocated resources, academic range and relationship of these institutions, and in their forms of government and administration. It should be possible to distinguish broadly between those changes which arise as a result of policy decisions at the national level, those which are the consequence of decisions taken by individual institutions, and those which reflect a gradual and complex adjustment to changing circumstances. One factor which clearly needs much more careful analysis, however, is the degree to which actual and anticipated demand (arising from demographic pressures and rising expectations) have dominated the design of new structures at the expense of other considerations (such as the eventual "fit" between the output of the post-secondary sector and the actual manpower requirements of the economy). This understandable stress on the demand factor has meant that much of the debate about new structures is concerned with such questions as whether the scale and forms of post-secondary provision should be tailored to fit the distribution of potentially qualified entrants leaving school; whether the number and distribution of such entrants should be altered by so changing entrance requirements as to ensure a fit with the places likely to be available - a point of crucial relevance to the discussion of "selective" and "open" admissions policies; and whether the

parameters of expansion should be set basically by considerations of cost (absolute, relative and unit) leaving the component parts of the system to find the best solutions they can within the set limits, according to their own academic character and objectives.

Costs and Resources

22. There is an understandable temptation for governments to favour "defensive" structures in facing the problem of demand, since both absolute and relative costs are rising steadily in the post-secondary sector and resources are scarce. "Defensive" in this context means structures designed to protect the existing institutional pattern both from surges in demand and from excessive experimentation or a surfeit of novelty. Many educational planners have seen strict cost control as an effective instrument of planning for such "defensive" purposes, while neglecting "positive" or developmental techniques. (Governments, however, are not invariably consistent in this respect, since they are also under social, political and educational pressure to continue the expansionist policies of the last decade and, in particular, are committed to further growth by the "hidden momentum" created by antecedent expansion in the secondary schools systems - as the recent OECD study has made clear.) All the same, government agencies are usually inhibited from making long-term financial commitments because budgetary policy is affected by changes in econonomic conditions and political objectives, and because refinements in projection techniques continually modify long-range forecasts. This fact reinforces the tendency to favour "defensive" structures and to develop contingency planning based upon minimum rather than optimum estimates of future development. It also leads to spasmodic and, sometimes, emergency readjustments when the "defensive" structure is suddenly found to be out of touch with reality. A growing realisation of this danger is now being shown by planning agencies, which are consequently seeking to develop more sophisticated means of numerical projections, of estimating costs, allocating resources and, hopefully, of evaluating the effectiveness of alternative policies. As these means are developed, they must inevitably lead to new structural relationships between state agencies concerned with planning and finance and the individual institutions in the post-secondary sector.

Educational Objectives

23. There is increasing concern with the educational objectives of post-secondary education - for instance, the desire to improve the general educational background of students in vocational courses, to link the preparatory training of teachers, social workers and others in the "helping" professions, to enhance the in-service training facilities of teachers, to promote curriculum development work at the school regional and national levels, to develop the skills of knowledge-getting and knowledge-using and to minimise the amount of rote or factual learning. All these new aims are producing structural changes. In all Member countries the effort to achieve existing objectives more effectively and to define new objectives more precisely finds expression in new course patterns, new institutions, new relationships between fields of study, and new kinds of provision for fundamental research. Though it is often very difficult to establish clearly the sources of such innovations, to chart their development or evaluate their effect, much effort has lately been invested in activities of this kind. There is, however, the ever-present risk that innovations may be undertaken because they are intrinsically attractive, without due account being taken of other variables. For instance, discussion of changes in a curriculum structure can absorb considerable amounts of faculty time although such changes may actually be less relevant to subsequent student achievement than learning styles acquired during earlier schooling or hidden motives for occupational choice which derive from the social or family background of students. Discussions of this kind occur because faculty and students are interested in them, and have relatively easy access to the machinery which decides the form and content of the curriculum; they may, however, take little account of manpower requirements and opportunities, because such criteria affect national rather than institutional planning. There is also the risk that innovations may sometimes be pseudo-innovations in which the fact of novelty is more important than its content, or marginal innovations whose significance has been exaggerated. They usually occur when a general desire for change has not been focused on the most urgent or relevant problems. This fact reinforces the need to devise an improved flow of information and better methods of decision-making.

Manpower Requirements

24. Post-secondary education in most Member countries has customarily been divided into two main sectors: the first, with

a strongly vocational orientation and concerned primarily with technical and teacher training, is generally under closer governmental control than the second, or university component, which has enjoyed relative freedom in pursuing broader educational goals in teaching and research. This division, often simply expressed as the difference between "training" and "education", is becoming less meaningful. On the one hand, wider educational goals are being set for "vocational" institutions, and much more flexible ideas about shorter, part-time, retraining and "recurrent" courses are emerging. On the other hand universities are also becoming more flexible in the range and character of their courses, and beginning to make increasing provision for specialised and quasi-professional work of a kind that was previously outside their scope. Studies in a number of Member countries have been specifically concerned with the supply of medical, scientific and other professional or quasi-professional personnel, and with the need both to make structural changes reaching back through the school system and in the structure of post-secondary education if such trained people are to be available to meet social demand. In the next decade, it seems probable that new educational structures may be needed in a number of Member countries to meet the problem of manpower deficiencies and the planning of such structures is likely to be more and more a matter of national concern and policy. The converse problem - that of possible over-supply of certain types of graduate - raises different questions, because it may reveal a conflict between social policy (rising expectations and a desire to promote equality of opportunity) and the actual manpower needs demonstrated by economic planners.

Social Policy

25. That is why social policy raises matters that are of great complexity in studying problem-structure relationships, since more (and usually unquantified) variables are involved - including both the explicit and implicit public assumptions about the nature of post-secondary education. It covers, indeed, the whole range of debate on educational policy, and much of this debate is still conducted in terms of values. Some of these values, notably the aim of greater equality of opportunity, and the need to redress inequalities created by inadequate educational possibilities in the past, are matters of great importance and public discussion. The difficulty lies in expressing these values as objectives capable of precise operational definition. It is, for this reason, important to indicate wherever possible the links between stated public

policy and educational structures. (The recent French reforms, for instance, seek to widen the area of participation, the UK decision to establish Polytechnics and the Open University seek to increase the range of institutions of degree level and to reduce the gap between the "public" and the "autonomous" university institutions.) The analysis of such links may prove to be a vital means of distinguishing between different types of stuctural change and of deciding which of them are capable of transfer from one national or institutional context to another.

Means of Policy and Decision-Making

26. All studies of post-secondary education in the last few years have drawn attention to weaknesses in the policy- and decision-making structures, such as the lack of adequate data on which to base policy, the failure to present even the available data in a form which assists rational decision-making, the lack of acceptable criteria for evaluating both data and policy proposals, and the shortage of planners and administrators at both national and institutional levels with the skills and experience necessary to operate more sophisticated systems. Some steps are now being taken to overcome these weaknesses, but in this respect education lags behind other large-scale enterprises. Since these weaknesses exist at a pivotal point in the system, and inevitably affect all the component parts, it would seem desirable to focus considerable attention on new structures which are designed to deal with them.

Administrative Mechanisms

27. Similar considerations apply to the administrative mechanisms which are needed to implement and control policy. Experience has already shown, in sectors outside education, that procedural structures (such as budget techniques) are often transferable as between institutions and types of institutions. For this reason, when new administrative structures within the post-secondary sector are considered, it would be sensible to take into account the comparable structures that have been developed in government, industry and commerce. This is all the more important since, in a number of Member countries, management consultants are increasingly being employed for this purpose; and since, in any case, this appears to be an area in which new solutions are beginning to proliferate. One important feature to note here is a tendency to develop special

research structures (specialist research councils, agencies, etc.) in parallel to the formal university structure.

Techniques for Institutional Flexibility

28. After a decade of rapid expansion, the point has generally been taken that higher education (which long enjoyed a marked stability of structure and practice) will henceforth be characterised by continuing change. This not only adds a new dimension to forecasting (because it diminishes the value of purely linear and quantitative techniques); it also means that flexibility becomes an increasingly important criterion in evaluating new structures. They need to be judged by the degree and ease with which they can adapt to emerging situations, as well as by their relevance to a particular and immediate problem. The history of education is full of examples of innovations which have proved to be culturally and temporarily specific and, once institutionalised, have proved incapable of further development. It must now be a major aim of policy to design new structures which are amenable to revision and renewal and that are sensitive to changes in the context in which they must operate.

Tests of Operational Viability

29. The need to judge structures from the standpoint of operational viability, as well as intrinsically, is also being appreciated. Some new structures (for improved institutional management, for instance, or curriculum development) encounter serious operational difficulties, such as opposition from faculty, or lack of sufficient money and suitable personnel or other resources. Moreover, if students of certain social origins and educational background tend to predominate in particular types of institution, it may be due to the social system, to social and economic factors, or the policy of the admitting institutions. A new institutional map that disregards student attitudes and behaviour may not be viable. Insufficient attention has yet been paid to such barriers to innovation, especially at the second stage when the new structure has been formally accepted but remains nominal because it cannot be effectively implemented. One of the disadvantages of cataloguing new structures by their published description lies in the fact that such second-stage failures are not usually analysed or publicised. Yet, from the standpoint of comparison and transfer, an understanding of the reasons why some structures fail is just as important - though harder to come by - as an

understanding of the reasons why others succeed.

30. When there is so little information available about the nature and effects of new structures in post-secondary education, and when relatively little research has so far been done on them, it is not surprising that even less attention has so far been paid to some of their long-range implications - though such attention is a natural extension of a desire for flexibility and a concern with operational viability. This is partly a methodological problem: without much more data, much more experience, and much more effort, model-building and simulation may seem to be more of a game for research teams than a serious instrument for planning future development. But it is a conceptual problem too. The advent of mass post-secondary education is relatively so recent that many questions about its consequences still await clear formulation. Will continuing expansion produce an over-supply of trained personnel who then cannot find employment commensurate with their training? Is the right balance being struck between types of post-secondary education; and by what criteria is the word "right" to be defined, and by whom? Does a movement towards mass post-secondary education shift - for reasons of cost and concept - the emphasis more towards teaching needs and, so far as universities are concerned, away from their traditional role as "centres of excellence" and research? If so, how and when should research be promoted and are special measures needed to ensure that a sufficient level of fundamental research is maintained? Should post-secondary education retain a hierarchy of institutions, and, if so, how steep should be the gradient of the pyramid, and what possibilities should exist for transfer between its steps? How far do decisions of this kind conflict with the concept of equal opportunity? What effect does the location (and size and character) of new institutions have upon regional and social development? How far are decisions about the post-secondary structure effectively being prejudged by decisions about the secondary school structure (which may be made independently); alternatively, in what ways does the post-secondary structure exert a long-term effect upon decisions about the secondary school system and what are the consequences for future structures of the increasing pressure of numbers on post-graduate education? It is sufficient merely to begin listing such basic questions to realise that, so far as longer-range issues are concerned, expansion has been moving forward remorselessly into largely uncharted territory and that, on the evidence so far available, even informed guesses are scarce. It is essential that any new national structure, which is bound to be dealing with developments up to 1980, at least, should devote some resources to working out the broader implications of

the developing policies of post-secondary education, and to endeavouring to map the complex inter-relationships between the post-secondary sector and the educational system as a whole, between education and manpower needs, and between social demand and the resources likely to be available for educational development. As questions of post-secondary education become more "political", it is increasingly necessary to design planning machinery which takes account of the social by-products of the process of expansion and diversification.

V. THE DEVELOPMENT OF NEW STRUCTURES

31. The development of new structures, of the types summarised in Section II above, is the result of complex processes in each national system of post-secondary education. Yet, even where there is a mixed public-private system (as in the USA and in Canada), the patterns that are emerging appear to have certain broad features in common with developments in other Member countries with a greater degree of central provision and control. Although the sociology of educational structures is still fragmentary, several of the available studies seem to indicate a movement of this kind. Various reasons for this apparent convergence towards a common model may be advanced. There is, for instance, the similarity in underlying social structure in advanced industrial societies, and a consequent similarity in the manpower skills required by modern technology and social organisation. There is the influence exerted on newer educational systems by the ideas and practices of the older ones, and the interaction of ideas produced by improved communication and exchange of experience - a process which has been greatly accelerated in recent years, not least by the activities of international organisations, specialist academic bodies and the student community. There is, finally, the effort in many Member countries as the size of the post-secondary sector has grown - to overcome the cultural lag between its methods of organisation and the more elaborate management techniques which have been worked out in other sectors of the economy. The effect of procedural similarities should not be underestimated. It may be argued that the factors leading to such a convergence may, over the next ten years, be more significant than the variations between national systems which have been inherited from the past.

32. An argument of this kind, however, can only be tested by careful cross-national comparison, which distinguishes between new structures designed to meet common problems and those which are a response to specific local circumstances. This is

another reason to support the case, made earlier in this paper, for a problem-based approach to structures.

33. Since national (or state) agencies are the focus of all problems affecting the post-secondary sector, and seem likely to exercise increasing control over its size and character, it is necessary to examine first the nature of these agencies, and the extent to which they themselves are developing new structures for their own purposes. There are, in this respect, some key questions to be answered.

(a) What is the form of the agency, and how does it relate to the overall machinery of government?

(b) Who appoints it, what is its composition, and what staff does it have?

(c) What are its powers, budget and methods of operation?

(d) What degree of autonomy, in what respects, remains in the component parts of the system?

(e) How does it determine its policy? To what extent do other agencies (government departments, research councils, academic and professional organisations, etc.) have formal or informal access to it? What sources of data does it have, and what types of data are used in decision-making?

(f) By what means does it convey its policy or advice to the institutions for which it is responsible, by what means does it monitor the implementation of its policy, and by what means does it evaluate the results?

(g) Over what period of time does it project its planning process, and to what parts of the system (numbers, finance, organisation, curriculum, and research) does it apply this process?

(h) To what extent has it sought to encourage experimentation and diversity within the system in recent years, and to what extent (and in what respects) has it sought to enlarge the area of central planning? How does it distinguish between provision for teaching and for research?

34. Where no such agency exists, or where it exists only in embryonic form, it is necessary to ask why it does not exist, what alternative structures are used to control the development of the post-secondary sector, and how the character of that sector is affected by the absence of a strong central agency. It is important to determine whether the movement towards a "spectrum" approach to post-secondary education is more pronounced where stronger central planning powers and agencies exist, or whether it derives from other variables.

35. It follows that, methodologically speaking, this project should be as much concerned with the manner in which new structures are developed and evaluated - both at the national or institutional level - as with the structures themselves. In particular, it will seek to establish how far, within Member countries, appropriate guidance on development procedures is given to those engaged on them, and to indicate the source and character of such guidance. In the decade now beginning, it may be more urgent (and valuable) to promote systematic development procedures (and to exchange information about them) than to focus attention on specific structures which are bound to be shaped to a considerable degree by national traditions and circumstances. A comparison of such procedures, since they must be problem-oriented, are more likely to yield common and transferable factors than a comparison of their local results. It should also clearly demonstrate how far there is an underlying movement towards a rationally planned and coherent post-secondary sector of education.

VI. A DRAFT PROGRAMME OF WORK

Basic Principles

36. This programme requires the participation of those groups in Member countries which are studying, planning and developing the future structures of post-secondary education. It must draw upon and compare their experience in this field, and promote the exchange of information and ideas between them. Such groups will reflect both "representative" and "experimental" points of view; though most of them will be of an official nature (e.g. - special committees or planning agencies attached to Ministries of Education), some may be of semi-private nature operating under the auspices of a university or foundation. In some instances, their work will be well advanced with accumulated experience already available (i.e. part of the new structures and institutions already functioning); in others,

such groups will be only in the process of formation. Country representatives of these groups will constitute a Steering Committee to advise on the development of the programme (see below).

Special Types and Areas of Investigation

37. The implementation of the programme within the general context described in the earlier part of this report, will depend on:

(a) Direct contributions by the national groups - "Vertical studies".

(b) Special studies by the Secretariat, on a cross-national basis, on selected issues - "Horizontal studies".

38. The vertical studies, to be prepared by or under the auspices of national groups participating in the programme, will deal with specific national approaches to the creation and long-term planning of new structures of post-secondary education. These studies would, as far as possible, follow common guidelines to ensure reasonable comparability between the various national approaches. Countries which are setting up new structures of post-secondary education or launching radical reforms of existing ones are actually attempting to redesign the "institutional map" of their post-secondary system. This map, which can be most simply presented as an organigram, should show the various types of institutions - universities, two-year colleges, normal and higher technical schools, and new types of institutions which compose the system, the prescribed length of studies, admission requirements, degrees awarded and the possibilities of transfer from one to another, etc. The counterpart, in academic terms, of such an "institutional map" is the "map of learning" - that is, the manner in which a system (or an institution) seeks to accomodate the evolving curriculum within an appropriate organisational framework which takes account of such matters as new subject-matter, inter-disciplinary teaching, and sequences of courses. It is this organisational framework, not its contents, which is the concern of this programme. The studies will therefore comprise:

(a) An analysis of the "institutional map" and of the "map of learning" which the country is setting up.

(b) A problem-oriented analysis concentrating on the suggested (or actual) response of the structure to a set of key issues facing post-secondary education.

(c) An assessment of mechanisms and procedures used for the definition and planning of new structures (bodies in charge of the work, their linkages with the academic, political and economic organisations, their formal and informal powers, etc.)

The vertical studies will be prepared by, or under the auspices of, national groups participating in the programme.

39. These horizontal studies, prepared under the responsibility of the Secretariat, will deal cross-nationally with a certain number of specific issues where an international comparison might provide new information and facilitate the taking of decisions about particular aspects of new structures. The exact nature of these questions will be established only at a later stage, but at least three of them can be identified at the present stage.

(a) A study of the flow of students into the different institutions of the post-secondary systems, of the resulting composition of the student body and, in general, of the students' choice of studies. Essentially, such a study should help to indicate which students enter which institutions and why they do so. If students of certain social origins and with a certain educational background tend to dominate in certain types of institutions, is this mainly because they cannot do otherwise (for economic or other reasons) or also because of different motivations? To devise a new institutional map is one thing, the reaction and behaviour of the student population towards such a map is another. For experience has shown that the motivations of students entering new institutions may be very different from those which the government had in mind when it created these institutions (e.g. they may seek full university education rather than vocationally oriented short-cycle higher education). Although the forecasting of student reactions and behaviour is very difficult, if not impossible, it would be a great step forward if better information could be obtained about the present situation, especially in countries where new types of institutions and new institutional maps are already

taking shape.

(b) Recent experiences and trends in post-graduate education, with particular reference to its institutional implications (location, duration of these studies, corresponding degree structure) to its relations with undergraduate and short-cycle higher education and to its linkage with research (and research institutions outside the higher education system). This study would thus help to throw light on the complex problems of the relation between the evolving patterns of mass higher education and the development of fundamental research and, therefore, on the links between educational policy and science policy.

(c) The development of short-cycle higher education (usually various kinds of two to three year colleges) some of which are closely integrated with the university system (e.g. Junior Colleges in the USA), others more or less separated from it (e.g. Colleges of Further Education in UK, Ingenieurschulen in Germany, IUT in France). The clarification of problems arising both from a relative separation and from a close linkage between short and long-cycle higher education seems indispensable in order to reach more rational decisions on new patterns of post-secondary education.

Other areas of study might include:

(d) Principles for determining the number of students in post-secondary education, totally or by sector.

(e) The distribution of periods of education and training over the life of each individual (structural consequences of recurrent education).

(f) Principles of admission to post-secondary education (the issue of selection of entrants versus open door policy; which institutions should be selective and which should be open; what type of relations should there exist between the two).

(g) Relations between the secondary school system and post-secondary education.